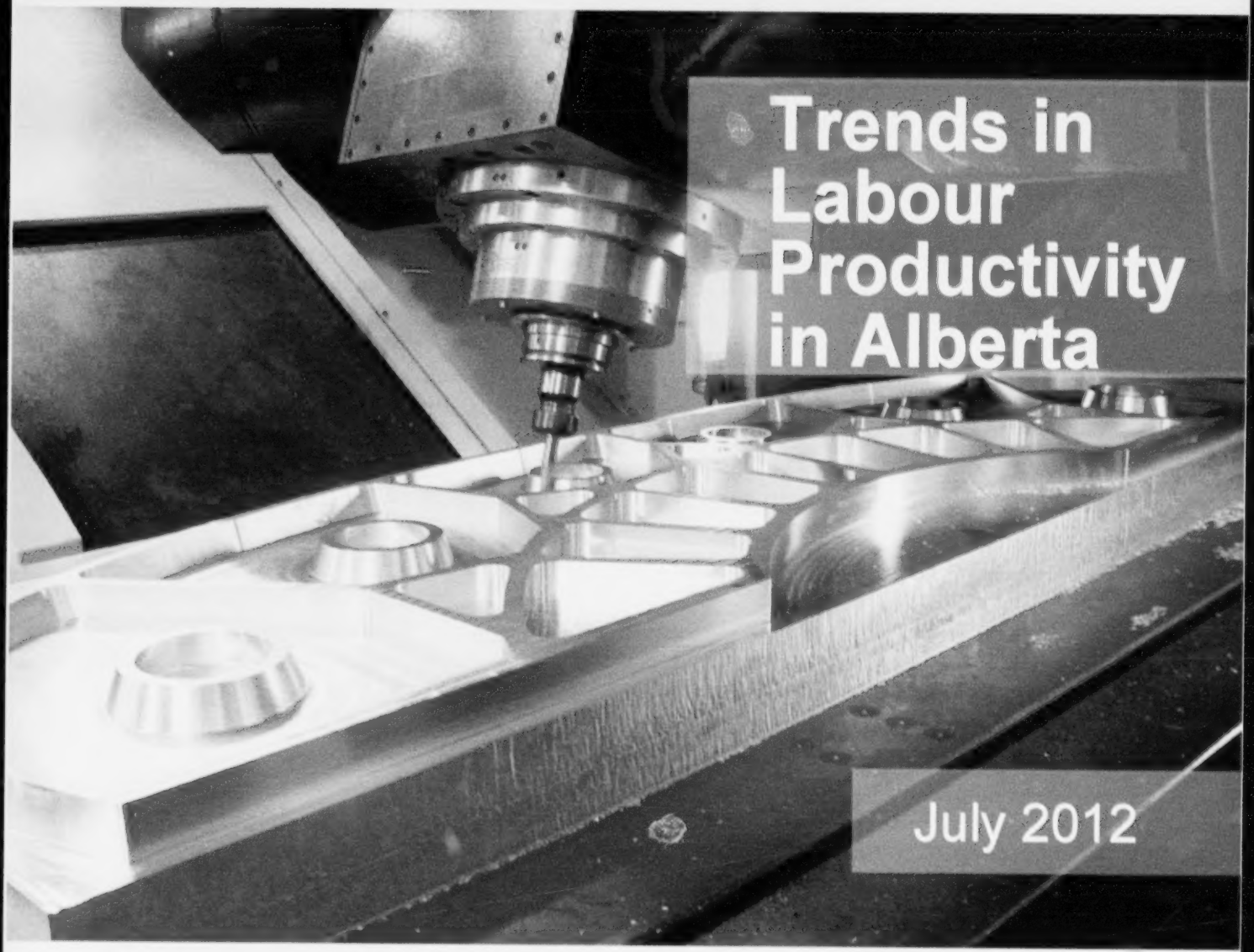


Trends in Labour Productivity in Alberta

July 2012

Alberta

Canada

Introduction

Labour productivity is the single most important determinant in maintaining and enhancing sustained prosperity[1]. Higher productivity growth would alleviate most of Alberta's labour shortage problems and secure long-term economic growth. The key drivers of labour productivity include skills and human capital, capital investment, and innovation.

Labour productivity is measured by GDP (Gross Domestic Product) per hour worked. In this report, Alberta's performance in labour productivity will be analyzed both relative to other provinces and by industry.

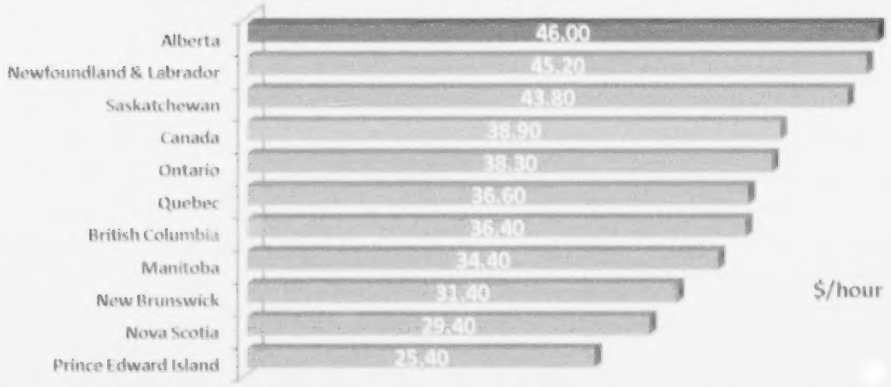
Long-Term Productivity Trends

According to Statistics Canada's provincial productivity database that was released in May 2012, Alberta continues to have the highest labour productivity in the country. In 2011, labour productivity in Alberta's business sector was $46.00 per hour (Chart 1), 18% higher than the Canadian average of $38.90 per hour. Moreover, Alberta has led the nation over the entire period (1984 to 2011), for which productivity estimates are available, with the exception of the years 2007 and 2008 when Newfoundland had higher productivity levels.

Chart 1

Business Sector Productivity of Labour - 2011

(Real GDP per Hour Worked, in 2002 constant dollars)



Source: Statistics Canada – GDP at basic prices

Over the past 15 years, GDP in Alberta's business sector[2] has increased by 63% or 3.3% per year. Over the same period, the total number of hours worked increased by 43% or 2.4% per year. As a result, labour productivity rose only 13% over the 15-year time period or 0.8% per year. In other words, only one-quarter of the increase in GDP came as a result of increased labour productivity and three-quarters was the result of increased labour input.

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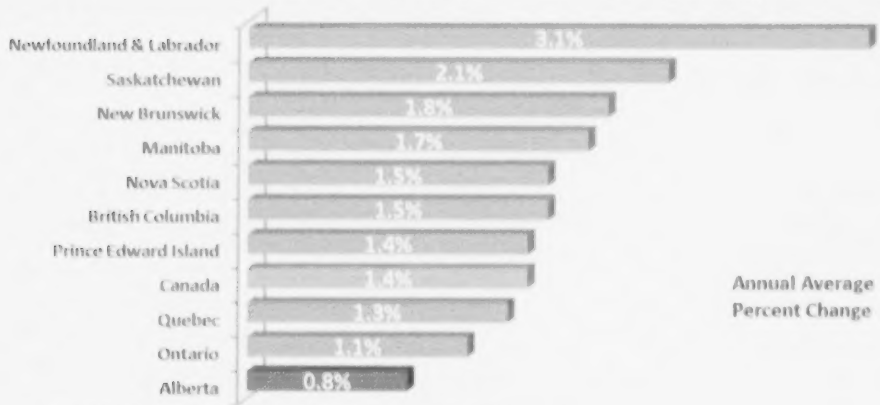
[1] Alberta Competitiveness Council – Moving Alberta Forward, page 20

[2] Excludes non-commercial sectors, such as public administration, healthcare and education

Even though Alberta has the highest labour productivity level in the country, Alberta's 0.8% average annual growth rate in labour productivity was the weakest provincial growth rate over the past 15 years (Chart 2), and was well below the Canadian growth rate of 1.4% per year. Moreover, Alberta's productivity growth rate is much lower than the 1.8% U.S. growth rate over the same period and that of most other international competitors (Chart 3).

Chart 2

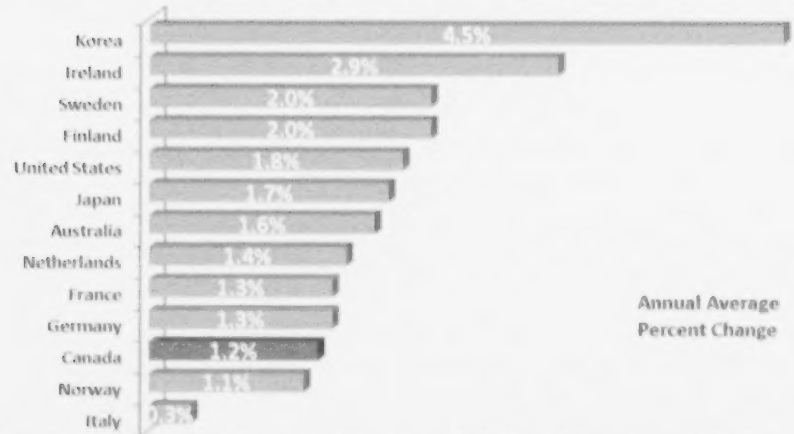
Business Sector Labour Productivity Growth Rates 1996-2011 (Based on Hours Worked)



Source: Statistics Canada – GDP at basic prices

Chart 3

International Labour Productivity Growth Rates 1996-2011 (Based on Hours Worked)



Source: The Conference Board and Groningen Growth and Development Centre

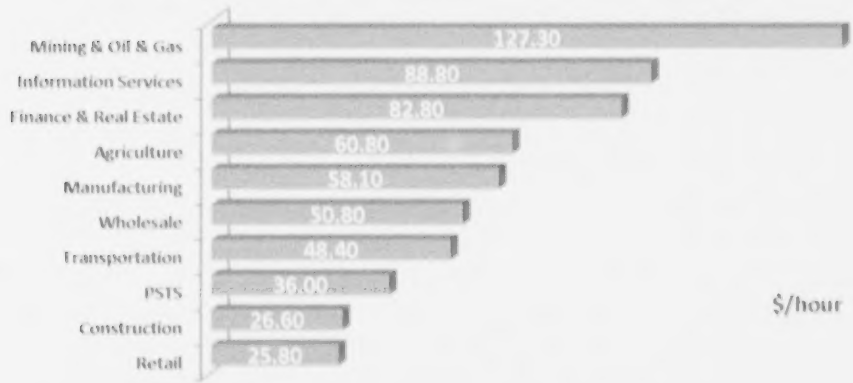
Both Alberta's high productivity level and its low productivity growth rate are in large part the result of its large and capital-intensive oil and gas extraction sector. In 2011, the labour productivity level was $127 per hour in the mining and oil and gas sector (Chart 4), because of very high levels in the oil and gas extraction industry ($274 per hour). When excluding the mining and oil and gas sector Alberta's labour productivity level drops to $38.10 per hour, only slightly ahead of the Canadian average of $37.25 and behind Ontario's $38.25. It is also much lower than the overall business sector productivity level of $46.00 in Alberta.

Although the mining and oil and gas sector has the highest productivity level, it has declined sharply over the past 15 years with productivity declining from $203 per hour in 1996 (and a high of $241 in 1999) to $127 in 2011 (Chart 5). There are a number of reasons for this decline. First, Alberta is running out of conventional oil and gas reserves and it takes more effort to find and extract each additional barrel or gigajoule. Second, the switch to oil sands has also reduced the overall productivity level for the oil and gas extraction sector as oil sands require more labour than conventional reserves. Third, new oil sands projects will have employees on-site before production actually starts (this is raising hours worked without any increase in GDP). Fourth, high oil prices have made high cost oil reservoirs more attractive.

Chart 4

Labour Productivity in Alberta Industries in 2011

(Real GDP per Hour Worked, in 2002 constant dollars)

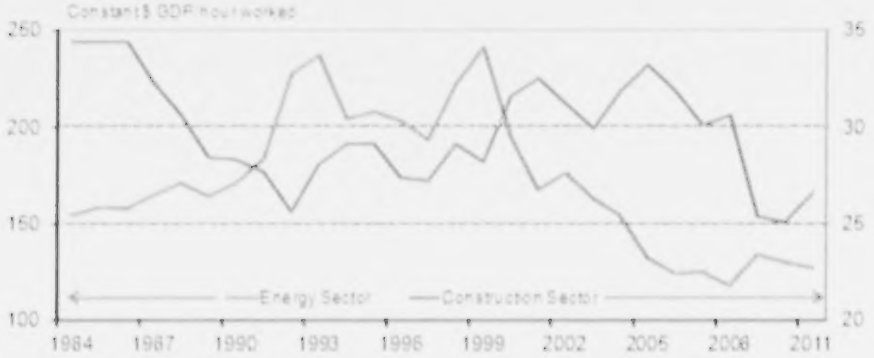


Source: Statistics Canada
PSTS = Professional, Scientific and Technical Services

Labour shortages combined with the rapid expansion of the sector also caused a decline in labour productivity in the construction sector over the past decade. Productivity in this sector rose steadily between 1997 and 2005, but has fallen by 20% since 2005 (Chart 5). Alberta's productivity level in the construction sector now lags behind that of many other provinces.

Chart 5

Productivity Levels in Alberta
Energy Sector and Construction Sector

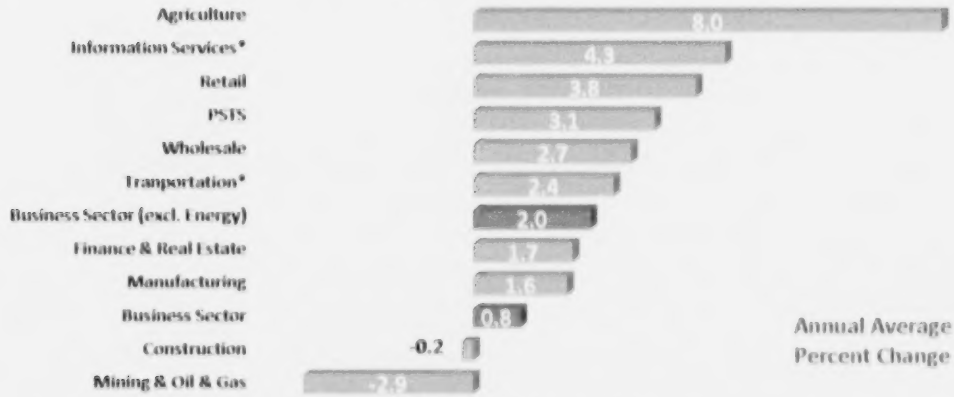


Sources: Statistics Canada and Alberta Enterprise & Advanced Education

When excluding the mining and energy sector from the business sector, Alberta's labour productivity performance is much better with productivity rising by 2.0% per year between 1996 and 2011 (Chart 6). This growth rate exceeds the Canadian increase of 1.5% per year (after excluding the mining and oil and gas sector), and compares favourably with the growth rates in many developed economies.

Chart 6

Labour Productivity Growth Rates in Alberta's Industries
1996 - 2011 (Based on Hours)

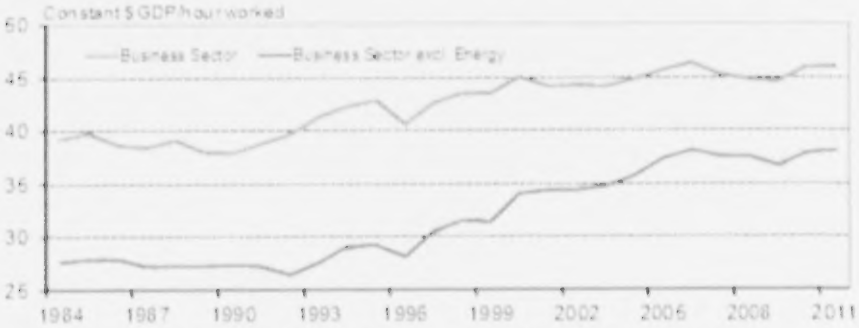


Source: Statistics Canada and Alberta Enterprise & Advanced Education
PSTS = Professional, Scientific and Technical Services
*1997-2011

Chart 7

Productivity Levels in Alberta

Business Sector and Business Sector excluding Energy



Sources: Statistics Canada and Alberta Enterprise & Advanced Education

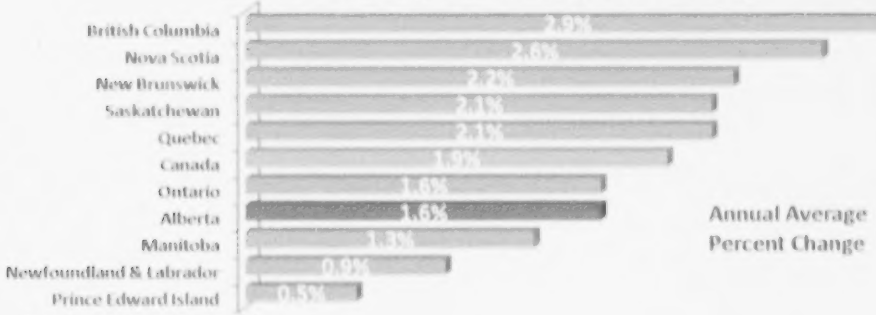
Most other sectors had strong productivity growth. Farm consolidation and capital investment led to the highest productivity growth in the agricultural sector with a rate of 8.0% per year. Information services (mainly telecommunication services) benefited from heavy investment in telecom equipment, especially by cell phone companies, and had productivity growth of 4.3% per year (between 1997 and 2011[1]). The retail and wholesale sectors benefited from investment in software and ICT equipment, e.g. self-scanners in retail outlets, and had annual growth of 3.8% and 2.7%, respectively, over the 15 year period.

Alberta's manufacturing sector also had the highest productivity level of all provinces. However, this sector had relatively weak productivity growth of 1.6% per year, a rate that was well below the 3.8% average annual growth in the U.S. manufacturing sector and even below Canada's 1.9% growth rate. Only Newfoundland, PEI and Manitoba performed worse than Alberta for growth in manufacturing productivity (Chart 8). High growth was registered in the globally competitive wood products (5.4% per year), machinery (3.9%) and pulp and paper (2.1%) industries (Chart 9). Refineries and chemicals had declining productivity, as high prices may have sheltered these industries.

[1] No data were available for 1996

Chart 8

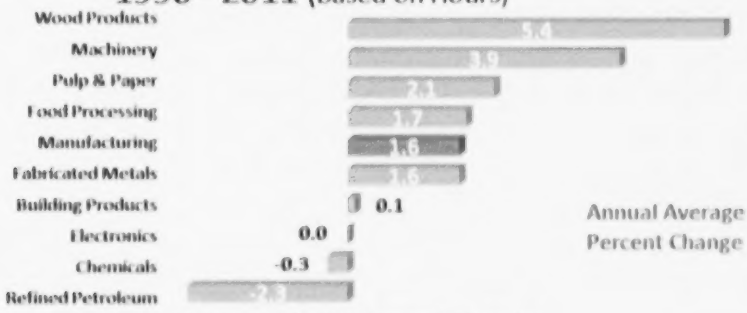
Provincial Labour Productivity Growth Rates - Manufacturing 1996 - 2011 (Real GDP per Hour Worked)



Source: Statistics Canada

Chart 9

Labour Productivity Growth Rates in Manufacturing Sectors 1996 - 2011 (Based on Hours)



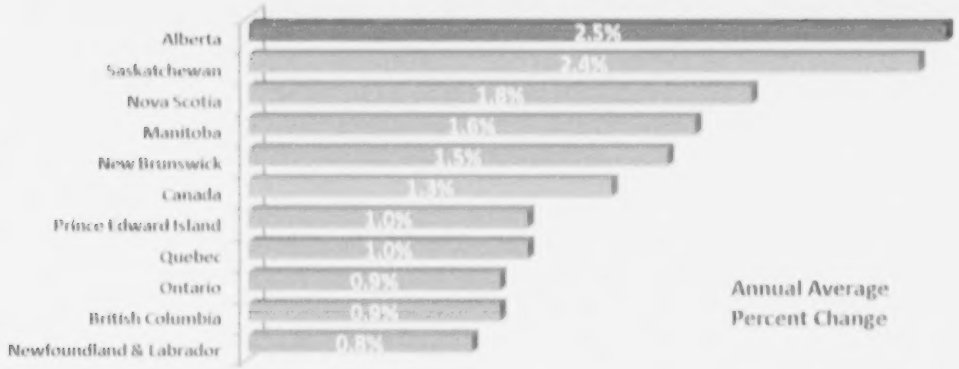
Source: Statistics Canada and Alberta Enterprise & Advanced Education

Although Alberta's overall productivity growth has been weak over the past 15 year, productivity in the business services sector[4] (excluding retail and wholesale trade and real estate) has grown strongly at an average annual rate of 2.5% per year (Chart 10), higher than the 2.4% growth rate for Saskatchewan, the number two ranked province, and much higher than the Canadian average growth of 1.3% per year. The following business service industries had the highest growth: information services (4.3% per year between 1997 and 2011); waste management services (4.9% per year between 1996 and 2011); professional, scientific and technical services (3.1% per year between 1996 and 2011); and transportation services (2.4% per year between 1997 and 2011).

[4] Business Services include the following industries: Transportation & Warehousing; Information & Culture; Finance & Insurance; Professional, Scientific & Technical Services; Administrative & Support, Waste Management; Arts, Entertainment & Recreation; Accommodation & Food Services. Excluded: Retail, Wholesale, Real Estate

Chart 10

Provincial Labour Productivity Growth Rates - Business Services 1996 - 2011 (Based on Hours Worked)



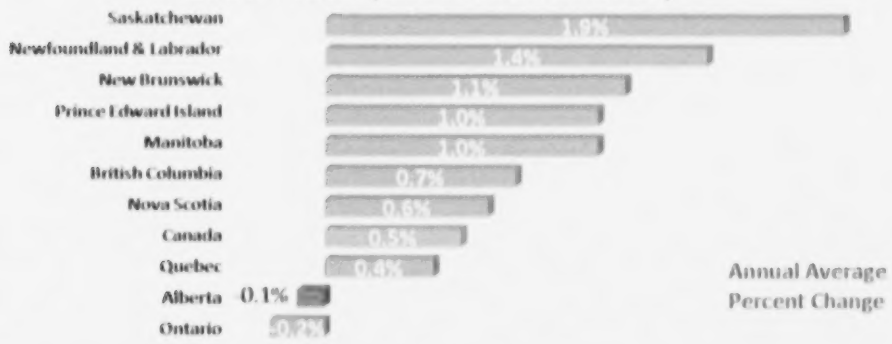
Source: Statistics Canada

Recent Productivity Trends

More recently, the economic downturn has also negatively impacted Alberta's productivity performance. As a result of the downturn labour productivity in the business sector declined between 2007 and 2009, and declined marginally by 0.1% per year between 2006 and 2011 (Chart 11), as a 4.2% increase in GDP over the 5-year period was more than offset by a 4.8% increase in the number of hours worked. Although other provinces also had lower productivity growth rates because of the downturn, Alberta's performance over the past five years was one of the worst of the 10 provinces.

Chart 11

Business Sector Labour Productivity Growth Rates 2006- 2011 (Based on Hours Worked)



Source: Statistics Canada - GDP at basic prices

The recent weakening of Alberta's labour productivity growth rates can be attributed to much weaker productivity growth in Alberta's business services sector, as productivity in that sector grew by only 0.8% per year (Table 1) between 2006 and 2011, compared with a rate of 2.5% per year over the 15-year period. A number of business service oriented industries, such as information and culture, professional, scientific and technical services, and accommodation and food services, had much weaker productivity growth between 2006 and 2011 than during the prior 10 year.

Chart 12

Labour Productivity Growth Rates in Alberta's Industries

2006- 2011 (Based on Hours)

Source: Statistics Canada and Alberta Enterprise & Advanced Education
PSTS = PRofessional, Scientific & Technical Services

Productivity in the goods producing sector declined at a slightly slower rate of 0.4% per year between 2006 and 2011 as it did over the entire 15-year period (0.7% per year). Within the goods producing sector productivity declined sharply in the construction sector, as labour shortages caused productivity declines in 2006 and 2007, while the global recession affected this sector in 2009 and 2010. As a result, productivity in the construction sector declined by 3.6% per year during the past five years, compared with a 0.2% annual decline over the 15-year period. The manufacturing sector saw its productivity growth rate drop from a 1.6% increase over the 15 year period to an annualized 0.7% increase over the past five years. The oil and gas sector actually performed better during the past five years, with an annual increase of 0.4% per year, than over the entire 15-year period during which productivity fell by 2.9% per year. This was also a significant improvement over the 5.7% per year decline for the five years ending in 2006. This productivity improvement may be the result of increased oil sands production.

In the manufacturing industry all major sectors, except metal fabrication and machinery, had sharply lower productivity growth, or even declining productivity, during the past five years than over the previous five years or the entire 15-year period (Chart 13). This deterioration was largely the result of the global recession as output tumbled in most manufacturing sectors while employment levels also fell, but at a much lower rate.

Chart 13

Labour Productivity Growth Rates in Manufacturing Sectors

2006 - 2011 (Based on Hours)

Source: Statistics Canada and Alberta Enterprise & Advanced Education

Table 1

Labour Productivity Growth Rates in Alberta's Industries

	Average Annual Growth Rates		
	1996 - 2011	2001 - 2006	2006 – 2011
Business Sector	0.8%	1.0%	-0.1%
Business Sector excl. Mining and Oil and Gas	2.0%	2.1%	0.0%
Goods Producing Sector:	-0.7%	-1.4%	-0.4%
Forestry	4.9%	4.7%	-4.3%
Agriculture	8.0%	9.4%	7.4%
Mining and Oil and Gas	-2.9%	-5.7%	0.4%
Construction	-0.2%	-0.4%	-3.6%
Utilities	-2.6%*	-3.9%	-1.5%
Manufacturing:	1.6%	2.0%	0.7%
Food Processing	1.7%	-0.5%	0.2%
Wood Products	5.4%	3.0%	4.2%
Pulp and Paper	2.1%	7.8%	-3.1%
Chemicals	-0.3%	5.5%	-2.8%
Machinery	3.9%	4.3%	5.0%
Fabricated Metals	1.6%	0.7%	1.5%
Services Producing Sector:	2.8%	3.2%	0.9%
Wholesale	2.7%	4.9%	1.7%
Retail	3.8%	3.8%	0.8%
Business Services:	2.5%	3.3%	0.8%
Finance and Real Estate	1.7%	2.5%	2.1%
Professional, Scientific and Technical Services	3.1%	1.7%	0.5%
Information Services	4.3%*	6.5%	2.1%
Transportation Services	2.4%*	2.5%	1.9%
Accommodation and Food Services	1.8%	3.8%	0.5%
Arts, Entertainment and Recreation	-3.5%	-0.9%	-4.5%
Administrative, Waste Management and Remediation	0.2%	1.5%	0.6%

*1997-2011

Sources: Statistics Canada and Alberta Enterprise & Advanced Education